



What the lighting industry requires from SSL.

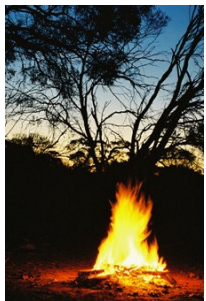
By
Jeff Quinlan



Overview

- I. A look back
- II. Design considerations
- III. Turning features into product
- IV. Closing comments

I. A look back



Ancient Times



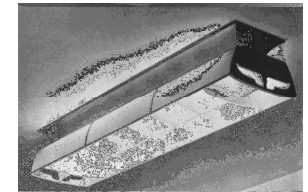
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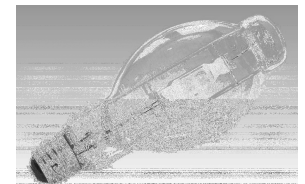
Incandescent
Lamp



Gas
Lamps



Fluor.
Lamps



HID

I. A look back





II. Design Considerations

- Cost
- LLF – Light Loss Factor
- SSL specific considerations

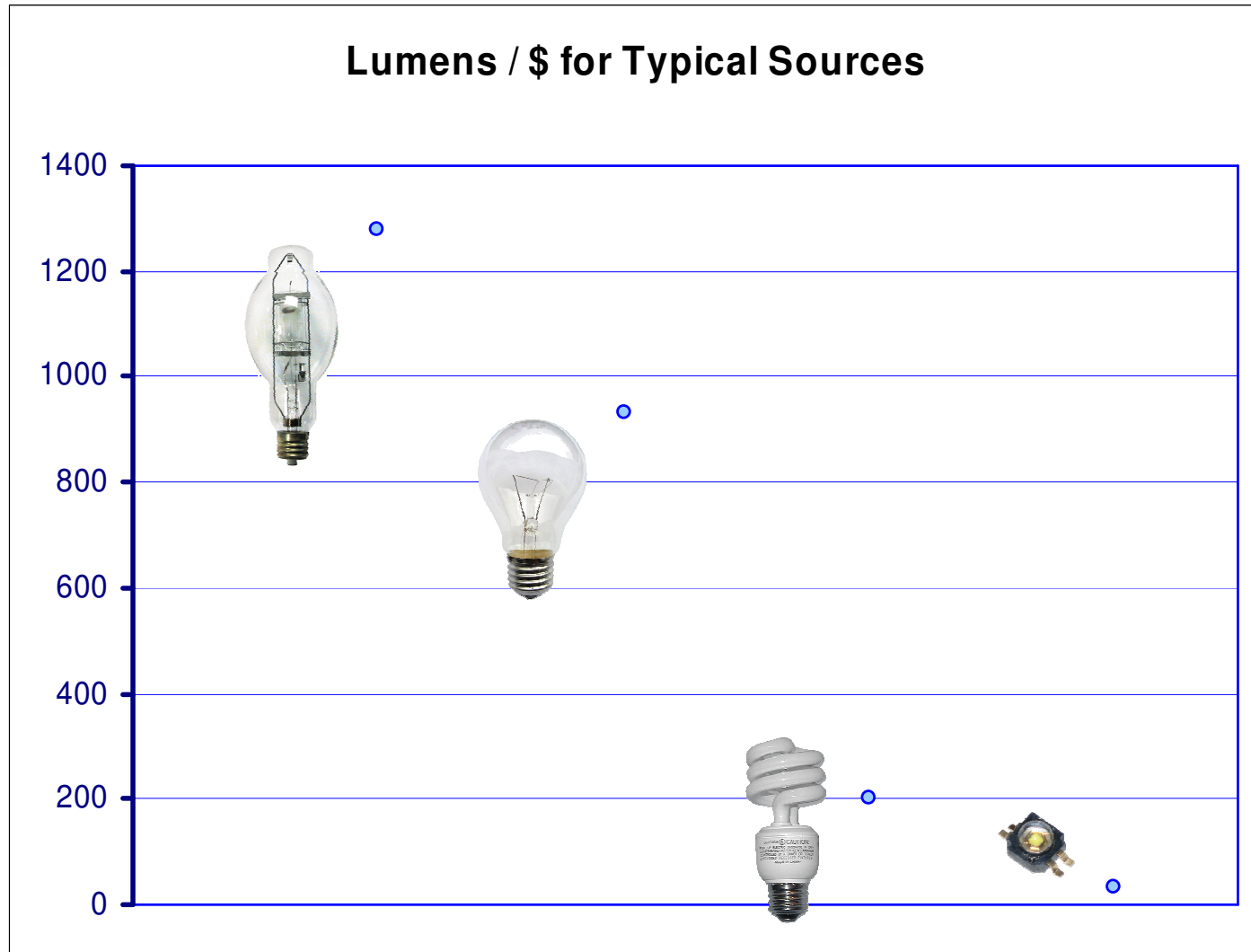


Cost

Total Cost of Ownership (TCO) =
Initial Product Cost +
Instillation Cost +
Operation Cost +
Maintenance Cost

Initial Cost

Lumens / \$ for Typical Sources



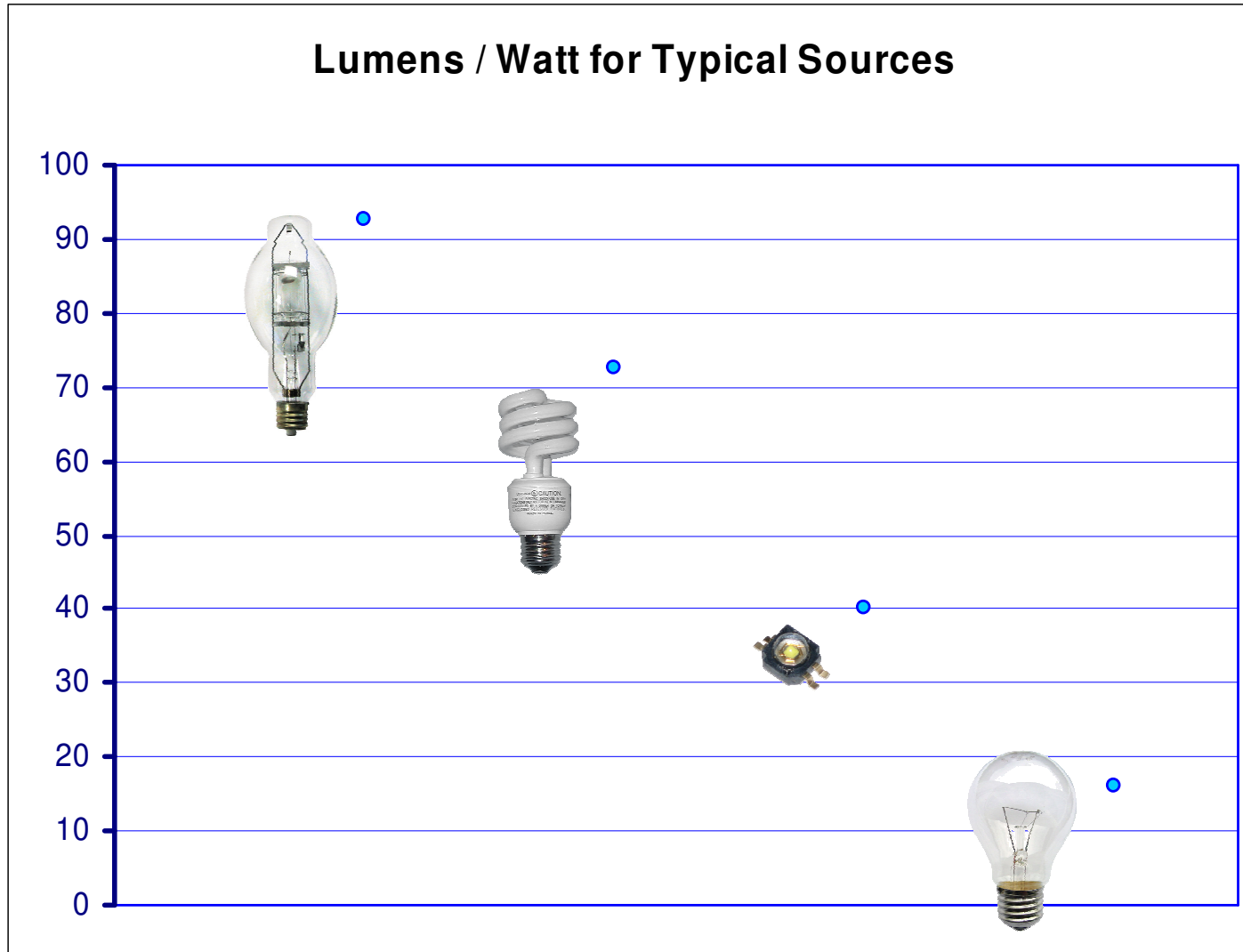


Installation Cost

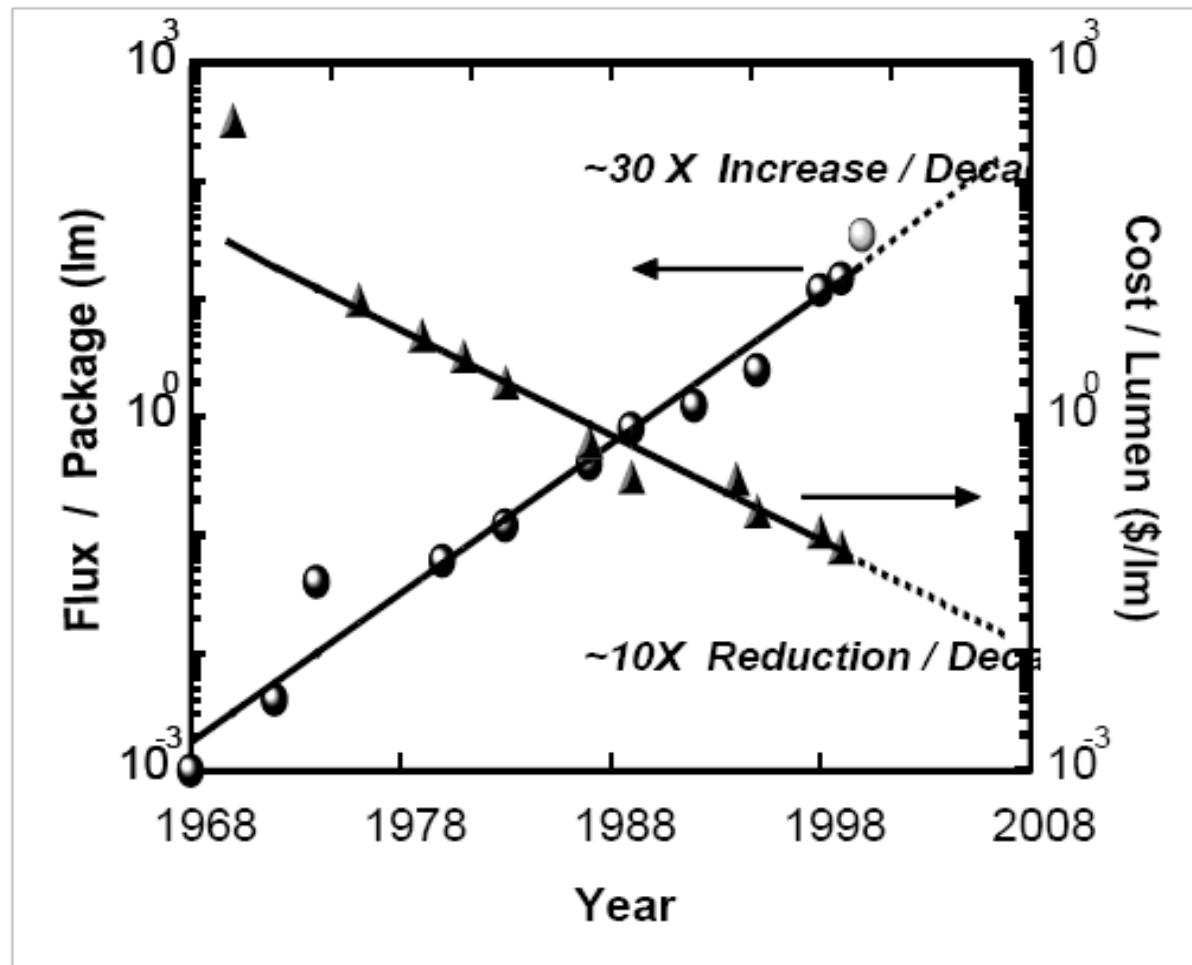
- Ease of installation
- “Complete” Fixture
- Integration into standard controls

Operating Cost

Lumens / Watt for Typical Sources



Operating Cost



Maintenance Cost

- Product Performance
 - Light output
 - Electronics
- Product Maintenance
 - Service, Service, Service
 - Modularity

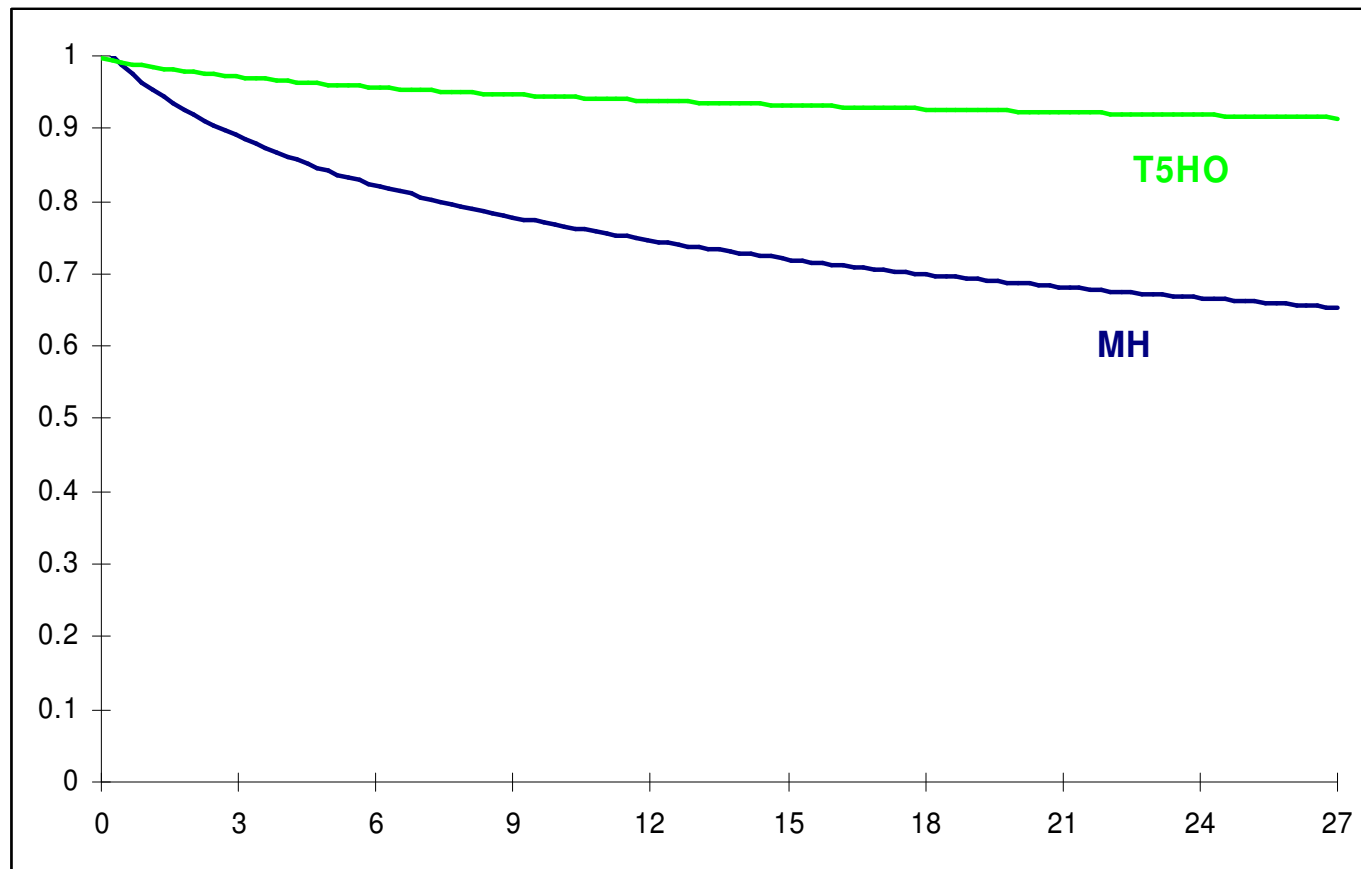


Maintenance Cost



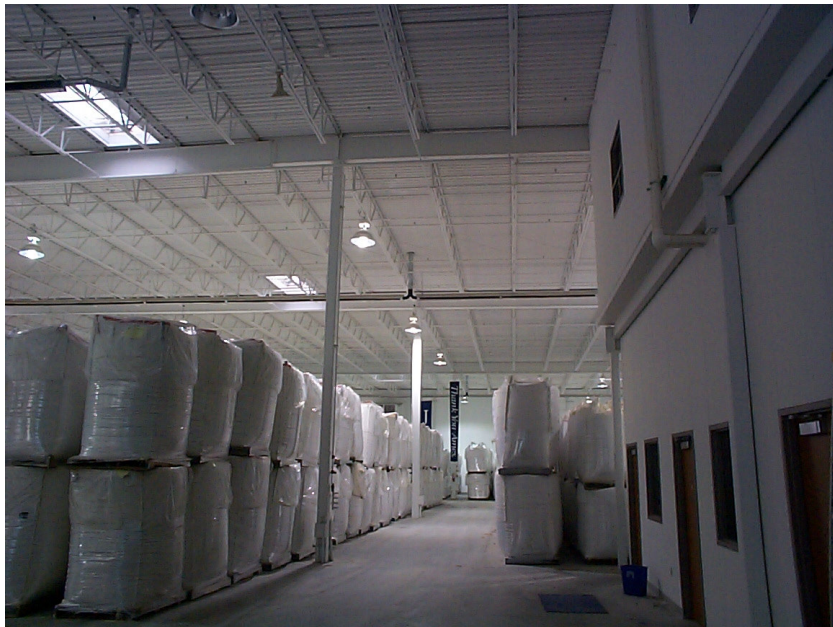
LLF – Light Loss Factor

- LLD – Lamp Lumen Depreciation



LLF – Light Loss Factor

- LATF – Luminaire Ambient Temp. Factor
- EOF – Equipment Operating Factor
- LBO – Lamp Burnout





SSL Specific Design Factors

- Color
- Form factor
- Binning
- Long Life
- Lumen Depreciation

Color





Form Factor

- Applications where size is an issue
 - Small Plenums
 - ADA compliant
 - Embedded Products
- Applications where size is a feature
 - Decorative elements

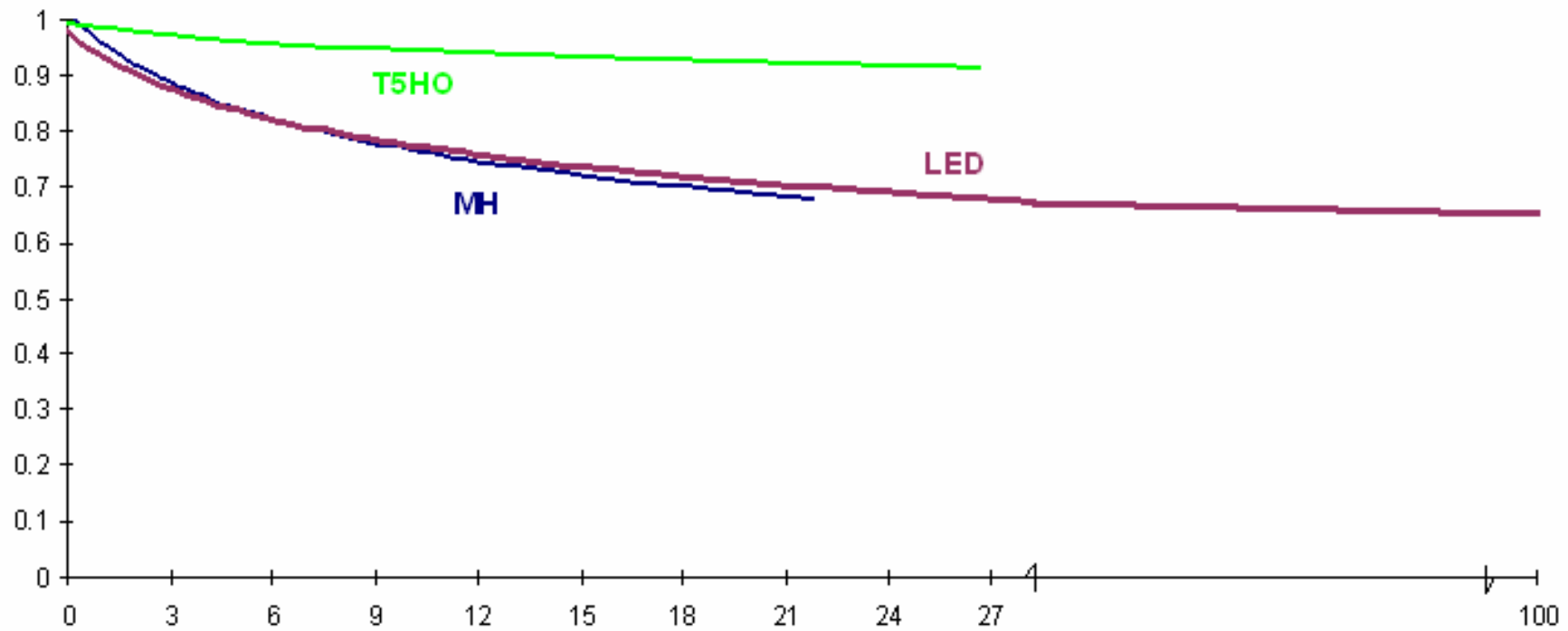
Binning



Long Life



Lumen Depreciation





From Feature to Product

- Life –Bridges
- Life – Step / In grade
- Life – Emergency egress
- Form – Track light
- Form – Cove lighting



Closing Comment

- Standardization
- Modularity
- Understanding the Customer
- Collaborative Development



Questions?



Their questions

- What do we want from a SSL manuf?
- What will it take to get ssl to market (Cost, perform, reliability)
- What is ABLs plans to take SSL to market? (New product, retrofit)
- Is the SSL market different?